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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
(Sprint Docket No. 2482)
(MBHB Case No. 03-730)

In re Application of:	)	
	)	
John C.W. Ngan	)	Group Art Unit: 2617
	)	
Serial No.: 10/666,373	)	
	)	Examiner: Manoharan
Filed: September 18, 2003	)	
	)	
For: Signal Strength-Based Call Forwarding for Wireless Phones	)	

TRANSMITTAL LETTER

Mail Stop Appeal Brief - Patents
Commissioner for Patents
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Sprint Docket 2482
MBHB Case No. 03-730

PATENT

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Serial No.: 10/666,373	)	Examiner Manoharan
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APPEAL BRIEF

Dear Sir:

This Appeal Brief is submitted pursuant 37 C.F.R. § 41.37, and is filed in furtherance of the Notice of Appeal mailed July 31, 2006.

Please charge the large entity Appeal-Brief fee to Deposit Account No. 210765.

I. Real Party in Interest

The real party in interest is Sprint Spectrum L.P., to which this invention is assigned.

II. Related Appeals and Interferences

Applicant is not aware of any related appeals, interferences, or judicial proceedings.

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III. Status of Claims

Claims 1-17 stand rejected. Claims 1-17 are appealed.

IV. Status of Amendments

No amendments were filed subsequent to the final rejection mailed March 28, 2006.

V. Summary of Claimed Subject Matter

This invention relates generally to generally wireless telephony and in particular to a call forwarding feature for wireless telephones (Figure 1, mobile stations 12) that is triggered when the received signal strength at the wireless telephone falls below a threshold level, indicating that the wireless telephone is moving out of service coverage. Abstract, Summary at p.8 lines 3-16, page 10 lines 6-16. When the telephone moves back into service coverage and the received signal strength rises above a threshold level, a second feature code is transmitted to deactivate call forwarding. See *id.*, Examples 1-3, page 18 lines 16- page 20 line 4.

As recited in claim 1, the triggering of call forwarding, and cessation of call forwarding, involves the use of feature codes. To better understand the meaning of the term "feature codes", some explanation is helpful.

In a telephone system a subscriber's profile may indicate how the service provider should handle or respond to attempts to connect telephone calls to or from a given subscriber. For example, the subscriber's profile may indicate that the subscriber is not allowed to place calls to certain area codes, and so the service provider may block any attempt by the subscriber to place calls to those area codes. As another example, the subscriber's profile may indicate that some or all calls to the subscriber should be forwarded to another number or to voice mail under certain conditions, and so the service provider may accordingly forward an incoming call under those conditions. See page 3 line 10 to page 5 line 14.

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To allow subscribers to configure services in their service profiles, the industry has for many years employed a concept known as "feature codes." A service provider may define specific digit sequences for use in activating, deactivating or modifying particular service features. Each sequence is known as a feature code (or, equivalently, a feature code string). A feature code usually consists of a preceding asterisk (*) or double asterisk (**) followed by a series of numeric digits (0 through 9), but could take other forms as well. Further, a pound sign (#) is sometimes used to delimit particular sequences of digits. For instance, the feature code string

*72 4085550303#

could mean that a call forwarding forward-to number is being registered. In this example, *72 may indicate that the call-forwarding feature is being accessed, and the digit sequence 4085550303 may indicate the forward-to number. Page 5 lines 15-page 6 line 3.

When a subscriber sends a feature code to a serving system, the serving system may respond to the feature code by employing logic to change (i.e., activate, deactivate or modify) a service feature in a local copy of the subscriber's profile. Alternatively or additionally, the serving system may forward the dialled digits to a central controller, and the central controller may then respond to the feature code by activating, deactivating or modifying a service feature in the subscriber's profile and then sending a response message to the serving system. Page 4 lines 4-9.

Claim 1 involves the use of feature codes to trigger call forwarding depending on the received signal strength measured on a mobile station. Page 22 lines 4-12. Communications between the mobile station and a base transceiver station (BTS) in a cellular network will typically suffer from varying levels of interference and signal degradation, due to factors such as

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(i) the number and power level of mobile stations concurrently communicating over the air interface, (ii) obstructions such as buildings, land or foliage, and (iii) the distance between the mobile station and the BTS. Consequently, the strength of RF signals that the mobile station receives from the BTS can vary. Furthermore, the strength of RF signals that the BTS receives from the mobile station can vary. Page 6 lines 10-16.

In the prior art, when a mobile station is actively engaged in a call, if the RF signal strength received by the mobile station and/or BTS becomes too low, the RF link will be effectively cut off, which will thereby disconnect or "drop" the call. Page 6 lines 17-19. This situation is prevented in this invention by activating call forwarding using feature codes when the RF signal strength falls below a threshold, and then turning off call forwarding using a second feature code when signal strength rises above a threshold level. Summary, page 8 lines 3-16.

Thus, claim 1 recites a method of activating call forwarding for a mobile station (Figure 1, item 12, Abstract, Summary at page 8) comprising the steps of:

monitoring a measure of received signal strength at said mobile station (page 10 lines 6-10; page 14 lines 5-15);

automatically transmitting a first feature code from said mobile station to a wireless network when said monitored measure of received signal strength falls below a threshold level (page 10 lines 10-13; page 14 lines 12-15), said first feature code activating call forwarding for said mobile station such that incoming calls are directed to a previously programmed directory number (page 14 lines 12-15, Examples 1-3 at page 18 line 16 to page 20 line 4);

continuing to monitor signal strength at said mobile station during a period when call forwarding is activated (page 17 lines 15-20) and

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automatically transmitting a second feature code from said mobile station to a wireless network when said signal strength rises above said threshold level, said second feature code deactivating said call forwarding. (page 17 lines 20 – page 18 line 12, Example 1 page 18 line 16 - page 19 line 5.)

Independent claim 11 is directed to wireless telephone (Figure 1, item 12). The wireless telephone includes circuitry monitoring a measure of received signal strength from a wireless base transceiver station. (Page 18 lines 4-5, page 14 lines 5-11.)

The telephone further includes programmable logic providing instructions for automatically transmitting a first feature code from said wireless telephone to a wireless network activating call forwarding when said circuitry determines that the received signal strength falls below a threshold level. Page 18 lines 5-8, page 14 lines 5-15, Example 1 page 18 lines 16-page 19 line 5.

The telephone further includes programmable logic providing instructions for automatically continuing to monitor the received signal strength after the first feature code is transmitted and for transmitting a second feature code from said wireless telephone to a wireless network deactivating call forwarding when said circuitry determines that the received signal strength, having previously fallen below a threshold level, rises above said threshold level. See page 18 lines 8-14, page 17 lines 15-20; Example 1 at page 18 lines 16-page 19 line 5.

Independent claim 13 is directed to an improvement to a cellular telephony network (Figure 1) comprising a plurality of base transceiver stations (Figure 1, 16) and roaming mobile stations (Figure 1, 12) subscribing to the network. The improvement comprises providing a service control node (page 3 lines 8-14, page 18 lines 20-24) in the cellular telephony network that activates and deactivates a call forwarding service for said roaming mobile stations. (Page

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10 lines 10-13, page 18 line 18- page 19 line 5). The call forwarding service is activated and deactivated by transmission of first and second feature codes from said roaming mobile stations, respectively. (Page 10 lines 10-16, Figure 1). Furthermore, the said first and second feature codes are transmitted when a monitored measure of received signal strength at the mobile stations falls below, and rises above, a threshold level, respectively. See page 14 line 5- page 18 line 1).

VI. Grounds of Rejection to be Reviewed on Appeal

There are nine (9) separate grounds of rejection set forth in the final office action that are to be reviewed on appeal. They are:

1. Rejection of claims 1, 4-5, 11 and 13 as obvious (35 U.S.C. § 103) over Akhteruzzaman et al. (U.S. 6,584,316) in view of Salcic (Proceedings of GeoComputation '97) and further in view of Byrne (U.S. 6,708,028).

2. Rejection of claims 2, 3, 7 and 10 as obvious (35 U.S.C. § 103) over Akhteruzzaman et al. in view of Salcic and further in view of Byrne, and further in view of Lundborg (U.S. 6,782,262).

3. Rejection of Claim 6 as obvious (35 U.S.C. § 103) over Akhteruzzaman et al. in view of Salcic and further in view of Byrne, and further in view of Lo (RE 37,301).

4. Rejection of Claims 8 and 17 as obvious (35 U.S.C. § 103) over Akhteruzzaman et al. in view of Salcic and further in view of Byrne, and further in view of Jenssen (US 2002/0022480).

5. Rejection of Claim 9 as obvious (35 U.S.C. § 103) over Akhteruzzaman et al. in view of Salcic and further in view of Byrne, and further in view of Chawla (6,496,700).

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6. Rejection of Claim 12 as obvious (35 U.S.C. § 103) over Akhteruzzaman et al. in view of Salcic and further in view of Byrne, and further in view of Haub (US 2004/0152429).

7. Rejection of Claim 14 as obvious (35 U.S.C. § 103) over Akhteruzzaman et al. in view of Salcic and further in view of Byrne, and further in view of Kissee et al. (6,567,665).

8. Rejection of Claim 15 as obvious (35 U.S.C. § 103) over Akhteruzzaman et al. in view of Salcic and further in view of Byrne, and further in view of Balachandran et al. (5,594,943).

9. Rejection of Claim 16 as obvious (35 U.S.C. § 103) over Akhteruzzaman et al. in view of Salcic and further in view of Byrne, and further in view of Hilliard et al. (6,876,949).

VII. Argument

Summary

All of the rejections are improper and should be reversed because the prior art does not teach or suggest automatically transmitting a second feature code from a mobile station to a wireless network when the received signal strength at the wireless station rises above a threshold level, the second feature code deactivating call forwarding, as claimed in each independent claim.

Legal standards

35 U.S.C. § 103 provides that a patent may not be obtained "if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains." Under *Graham v. John Deere & Co.*, 383

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U.S. 1 (1964), the relevant inquiries are the scope and content of the prior art, the level of skill in the art, the differences between the prior art and the claims and any secondary considerations, such as satisfaction of long felt need, failure of others or commercial success.

The Examiner bears the burden of establishing a *prima facie* case of obviousness. *In re Fritsch*, 972 F.2d 1260, 1265 (Fed. Cir. 1992). In order to establish a *prima facie* case of obviousness over a combination of references, the combination must teach or suggest all of the claim limitations. M.P.E.P. § 2143; *In re Royka*, 490 F.2d 981 (CCPA 1974).

As the Federal Circuit has explained, "[o]bviousness cannot be established by combining the teaching of the prior art to produce the claimed invention, absent some teaching or suggestion to support the combination. Under section 103 teaching of references can be combined *only* if there is some suggestion or incentive to do so." *ACS Hosp. Systems, Inc. v. Motefiore Hosp.*, 732 F.2d 1572, 1577 (Fed. Cir. 1984); see also *In re Lee*, 277 F.3d 1338 (Fed. Cir. 2002).

Accordingly, it is not enough that the references could be combined in the manner suggested by the Examiner. The prior art must also suggest the desirability (and thus the obviousness) of the combination. *In re Gordon*, 733 F.2d 900, 902 (Fed. Cir. 1984) (emphasis added); see also *Holdosh v. Block Drug Co.*, 786 F.2d 1136, 1143 (Fed. Cir. 1986); *In re Fritsch*, 972 F.2d at 1266 (explaining that the "mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification"). Thus, the Examiner can only meet the burden of establishing a *prima facie* case of obviousness "by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art [that] would lead that individual to combine the relevant teachings of the references." *In re Fine*, 837 F.2d 1071, 1074

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(Fed. Cir. 1988). See also *In re Lee*, 277 F.3d at 1342-43 (stating that rejections under § 103 must be based on evidence).

As the prior art must suggest the desirability of the combination, the proper view in making an obviousness determination is from a time just prior to the Applicant's conception of the invention. *In re Fine*, 837 F.2d at 1073. This is necessary, because "the references must be viewed without the benefit of hindsight vision afforded by the claimed invention." *Holdosh*, 786 F.2d at 1143. Using this reference point further prevents the impermissible use of the claimed invention as an instruction manual or template to piece together the teachings of the prior art in order to render the invention obvious. *In re Fritsch*, 972 F.2d at 1266.

1. The Examiner Erred in Rejecting Claims 1, 4-5, 11 and 13 as Being Obvious over a Combination of Akhteruzzaman, Salcic and Byrne

Claim 1 recites: A method of activating call forwarding for a mobile station, comprising the steps of:

> monitoring a measure of received signal strength at said mobile station;
> automatically transmitting a first feature code from said mobile station to a wireless network when said monitored measure of received signal strength falls below a threshold level, said first feature code activating call forwarding for said mobile station such that incoming calls are directed to a previously programmed directory number;
> continuing to monitor signal strength at said mobile station during a period when call forwarding is activated;
> automatically transmitting a second feature code from said mobile station to a wireless network when said signal strength rises above said threshold level, said second feature code deactivating said call forwarding.

Thus, claim 1 is directed to activating and de-activating call forwarding for a mobile station using feature codes transmitted by a mobile station to a wireless network, the feature codes triggered when the received signal strength falls below and rises above a threshold level.

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The prior art does not teach or suggest automatically transmitting a second feature code from a mobile station to a wireless network when the received signal strength at the wireless station rises above a threshold level, the second feature code deactivating call forwarding, as claimed in claim 1. Accordingly, the rejection should be reversed.

Akhteruzzaman

The call forwarding method of Akhteruzzaman works in a very different way from the invention of claim 1 in terms of how a mobile device returns to normal service (end of call forwarding). Akhteruzzaman works in a very different way, and uses GPS location as the trigger to return to normal mode. In particular, if there is a weak signal and the user has previously indicated that call forwarding should occur if the signal strength becomes weak, the method obtains a current GPS location of the mobile station. A computer program then proceeds to look up a land line telephone directory number stored in the mobile station's memory associated with the mobile station's GPS location. If there is no directory number for the current location, the process is complete and no call forwarding is accomplished. Only if there is a directory number for the GPS location of the mobile station will call forwarding proceed.

In Akhteruzzaman, after call forwarding has been triggered, the mobile device continues to monitor ***its GPS location*** (***not received signal strength***) and only after the device has left a predetermined GPS boundary will the device send a disabling signal to revert to normal operation. See Figure 8, steps 194 and 196, and the text at column 8, lines 46-67.

Applicant further notes that the method of Akhteruzzaman is rather onerous and cumbersome. His method requires the subscriber to manually enter specific call forwarding numbers for particular GPS locations where signal strength is weak and determine

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(programmatically, apparently) appropriate GPS boundaries for the location. (Col. 5 lines 65-67; col. 8 lines 65-67). Additionally, the approach has limited usefulness, since it is dependent on a land line telephone being present nearby. What if no landline phone is nearby? What if the person does not know in advance whether a particular location has a weak signal? What if the subscriber underestimates the size of the boundary at which a "restore normal operation" signal is sent to the network? Akhteruzzaman has no answers for these situations. Conversely, the present invention does not require usage of GPS or positioning information for the device, does not require a land-line phone to be nearby, and does not require a user to have to know in advance whether a particular zone has cell coverage or not. Call forwarding is triggered and un-triggered by monitoring signal strength, and does not require continuous monitoring of the location of the device.

Salcic

Salcic provides a description of a GSM (global system for mobile communication) which uses signal strength measurements ***as an aspect of a method for determining the position of a mobile station.*** As noted in the Introduction, and Abstract, and Title, the thrust of the paper is a method for automatic positioning (i.e., determining the position of the mobile station) as an alternative to using GPS (global positioning systems) signals, which are limited to "clear sky" situations where the phone is exposed to orbiting satellites. The Examiner has cited to the third paragraph in section 1.4, where the reference states that a mobile station receives downlink signal level signals from a serving base station and up to six neighboring base stations, and states that "[t]his information is a part of GSM system and is used in our system to estimate the position of the mobile station." See also section 2.2 and page 20, left hand column.

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Byrne

The Examiner states that neither Akhteruzzaman nor Salcic "teach when said signal strength rises above said threshold level, said second feature code deactivating call forwarding. However, Byrne teaches in an analogous art, when said signal strength rises above said threshold level, said second feature code deactivating said call forwarding (Abstract, lines 10-12, Col. 3 lines 65-66, col. 4 lines 38-43.)" Final rejection, page 7, first full paragraph. See also Final Rejection, page 3, third paragraph. Byrne is directed generally to a system and apparatus for selecting one or another telephone transmission format or mode to use, under the theory that when a phone can operate in one mode (cordless telephone mode) as opposed to a cellular wireless mode, there as cost advantages for the user by using the cordless telephone mode. See generally col. 1 lines 7-8; col. 2 lines 58 col. 3 line 18; col. 3 lines 60 et seq.

The three passages cited by the Examiner in the final rejection do not in fact disclose or suggest transmitting a feature code to deactivate call forwarding.

The Byrne Abstract teaches a monitoring means for automatically selecting a communications means (radio system transmitter) based on a criterion such as received signal strength. ***This is not a teaching of sending a feature code deactivating call forwarding.*** Similarly, the teaching at col. 3 lines 65-66 teaches selection of a radio system to use based on received signal strength. ***This is not a teaching of sending a feature code deactivating call forwarding either.***

Col. 4 lines 38-43 is to the same effect: "automatically assigning and reassigning a user to one of the radio telephone systems in accordance with the user control signals . . . ." Moreover, the entire text of this sentence is as follows:

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> In a third aspect of the invention there is provided a radio telephone system adapted to co-operate with at least one other radio telephone system, comprising user information exchange means respectively associated with each of the at least one other radio telephone system for exchanging user information signals ***between the radio telephone system and the at least one other radio telephone system***, monitoring means for monitoring user information signals of the radio telephone systems and selection means for automatically assigning and re-assigning a user to one of the radio telephone systems in accordance with the user control signals fulfilling at least one predetermined criterion, and in a fourth aspect of the invention there is provided a method for operating a radio telephone system adapted to co-operate with at least one other radio telephone system, comprising, exchanging user information respectively associated with each of the at least one other radio telephone system between the radio telephone system and the at least one other radio telephone system, monitoring user information signals exchanged between the radio telephone systems, determining whether the user information signals fulfill at least one predetermined criterion, and automatically assigning and re-assigning a user to one of the radio telephone systems in accordance with the user information signals fulfilling the at least one predetermined criterion.

Byrne, col. 4 lines 32-56 (emphasis added).

This statement is addressing the embodiment of Figure 5 in which a cellular cordless telephone operates between Digital European Cordless Telephone (DECT) system and a GSM cellular system which includes direct links 530 (Figure 5) for transmitting information ***between the two radio telephone systems' infrastructure***, that is, between the MSC (mobile switching systems) and Central Control Fixed Parts (CCFP) which control cordless base stations. See col. 9 line 14-65. The reference is not discussing transmission of ***a feature code*** from a mobile station to a wireless network. When a CCT telephone 200 enters the system it indicates which system (DECT or GSM) is a preferred system. "Then, the preferred system MSC or network control centre can communicate with the non-preferred system's MSC or network control centre and instruct it to handover the call to the preferred system." Col. 9 lines 64-67. ***The reference is therefore discussing inter-radio telephone system communications to control handoff from one system to another, not sending a feature code from the wireless telephone to deactivate call forwarding as claimed in claim 1.***

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Byrne, in combination with Salcic and Akhteruzzaman, fails to provide any suggestion for the subject matter of claim 1 wherein while a device is in a call forwarding mode it continues to monitor received signal strength ***and sends a feature code to a network node to turn off call forwarding when the signal strength rises above a threshold level.***

It is thus apparent that the Examiner's combination of Akhteruzzaman, Salcic and Byrne doe not teach or suggest using received signal strength in the context of call forwarding, let alone a wireless mobile station that compares signal strength to a threshold and then sends a feature code to a network node to turn off call forwarding of the signal strength is above a threshold. The rejection of claim 1 should be reversed. The rejection of claims dependent from claim 1 should be allowed by virtue of claim dependency.

Claim 11

As to claim 11, this claim is directed to a wireless telephone that includes, among other things:

"programmable logic providing instructions for automatically continuing to monitor the received signal strength after the first feature code is transmitted and ***for transmitting a second feature code from said wireless telephone to a wireless network deactivating call forwarding when said circuitry determines that the received signal strength, having previously fallen below a threshold level, rises above said threshold level.***"

The above remarks apply equally well to claim 11. The combination of Byrne, Akhteruzzaman and Salcic fails to disclose programmable logic in a wireless telephone that transmits a second feature code when the received signal strength rises above the threshold level.

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Claim 13

As to claim 13, this claim is in Jepson format and is directed to an improvement to a cellular telephone network. It recites that call forwarding service is activated and deactivated by "transmission of first and second feature codes from said roaming mobile stations, respectively, and further wherein said first and second feature codes are **transmitted when a monitored measure of received signal strength at said mobile stations falls below, and rises above, a threshold level, respectively**." In Akhteruzzaman, a message is sent to the network to turn off call forwarding not when receive signal strength rises above a threshold, as claimed in claim 13, but rather when the mobile device crosses some geographic boundary. See Figure 8, steps 194 and 196, and the text at column 8, lines 46-67. Byrne and Salcic both fail to describe monitoring signal strength in the context of call forwarding and ***sending a feature code to turn off call forwarding when monitored receive signal strength rises above a threshold.*** Claim 13 should be allowed for the same reasons as explained above.

2. The Examiner Erred in Rejecting claims 2, 3, 7 and 10 as obvious under 35 U.S.C. § 103 over Akhteruzzaman et al. in view of Salcic and further in view of Byrne, and further in view of Lundborg

As to the rejection of claims 2, 3, 7, 10 as obvious over Akhteruzzaman et al. in view of Salcic and further in view of Byrne, and further in view of Lundborg , it is noted that Claims 2, 3 and 7 and 10 depend from claim 1. Assuming for the sake of argument that the Examiner's comments vis-à-vis Lundborg are accurate for these claims, Lundborg does not make up for the deficiency in the other three references in failing to teach the subject matter of claim 1, and in particular the deficiency of Byrne in failing to describe sending a feature code to turn off or

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deactivate call forwarding when received signal strength rises above a threshold level. As noted above, Byrne teaches communications between two radio transmission systems, not transmission of feature codes from a wireless device to a network.

Lundborg is concerned with handoff of mobile devices between cells. Lundborg does not address call forwarding, nor does he teach or suggest that call forwarding, having been switched on, should be switched off in accordance with the teachings of claim 1 discussed above. Combining Lundborg with the other references suggest using Ec/Io measurements as a mechanism for measuring signal strength initially for purposes of geolocation (Salcic) or selection of a communications format (Byrne). However, Lundborg and the other references do not suggest continuing to monitor signal strength after call forwarding has happened and ***sending the second feature code to a network node when signal strength has improved above the threshold level.***

Accordingly, the obviousness rejection of claims 2, 3, 7 and 10 is improper and should be reversed.

3. The Examiner Erred in Rejecting Claim 6 as obvious under 35 U.S.C. § 103 over Akhteruzzaman et al. in view of Salcic and further in view of Byrne, and further in view of Lo

Claim 6 is rejected as obvious in view of Akhteruzzaman in view of Salcic, Byrne and Lo (RE 37,301). Claim 6 depends from claim 1 and includes all the features thereof. Claim 6 further and recites that the feature code is sent to the wireless network over an access channel.

Assuming for the sake of argument that Lo's "information code" is a feature code, it does not teach or suggest sending an information code pertaining to switching on or off call forwarding. The Lo reference is directed to a multiple access protocol used in a setup channel

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and using a feedback mechanism (col. 3 lines 47-59; Abstract). Accordingly, Lo does not add any pertinent teaching that overcomes the deficiency of the primary references in failing to teach the subject matter of claim 1.

4. The Examiner Erred in Rejecting Claims 8 and 17 as obvious under 35 U.S.C. § 103 over Akhteruzzaman et al. in view of Salcic and further in view of Byrne, and further in view of Jenssen (US 2002/0022480).

Claims 8 and 17 stand rejected over Akhteruzzaman in view of Salcic, Byrne and Jensen (2002/00022480). Claim 8 depends from claim 1 and recites further that the threshold level for determining whether to switch on and off call forwarding varies depending on the type of mobile station. In other words, for some types of mobile stations (e.g., a particular make or model), the threshold may be relatively low and for others it might be higher. Claim 17 depends from Jepson claim 13 and includes similar subject matter.

The Examiner cites Jensen for a teaching of call forwarding wherein the threshold level for call forwarding varies on the type of mobile station (Jensen, paragraph 15). Applicants submit that this is not a correct analysis of Jensen. Jensen teaches that values involved (signal strength, related to interference of channels between cells) are "determined by the particular type of ***mobile system involved***." The reference then discusses various types of mobile systems (not ***types of devices, as in claim 8***) such as CDMA system and AMPS (American mobile phone systems). Claims 8 and 17 are concerned with different types of mobile devices (such as year, make and model of device) within a given mobile phone system, not differences between mobile phone systems.

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Moreover, even if the concepts of Jensen were applied to Akhteruzzaman or the other primary references, the resulting combination does not overcome the rejection of claim 1 or claim 13 since Jensen is silent on call forwarding as claimed in claim 1 and instead is directed to handoff between cells and determining interference between cells. It does not overcome the deficiency of Akhteruzzaman, Salcic and Byrne discussed above. Furthermore, applicant's representative can find no mention of feature codes in the Jensen reference or usage of such features codes to turn on or off call forwarding. The rejection of claims 8 and 17 should be reversed.

5. The Examiner Erred in Rejecting Claim 9 as obvious under 35 U.S.C. § 103 over Akhteruzzaman et al. in view of Salcic and further in view of Byrne, and further in view of Chawla

Claim 9 stands rejected as obvious over Akhteruzzaman, Salcic and Byrne and further in view of Chawla (6,496,700). Claim 9 depends from claim 1 and further recites that the threshold level is within a certain decibel range.

Assuming for the sake of argument that Chawla is appropriate for citation of the subject matter of claim 9, it does not make up for the deficiency of Akhteruzzaman, Byrne and Salcic in failing to teach or suggest the subject matter of claim 1, from which claim 9 depends. In particular, Chawla is directed to methods for determining organizational parameters in a wireless system and discloses methods of determining signal strength and losses in wireless communications systems. Chawla is silent on a call forwarding feature, let alone call forwarding as claimed in claim 1. Even if Chawla was combined with Akhteruzzaman as the primary reference, at most it teaches characterization of organization parameters in a wireless system such

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as the Akhteruzzaman system but that fails to account for a method by which call forwarding should be terminated, by means of feature codes, as claimed in claim 1. Accordingly, the rejection of claim 9 should be reversed.

6. The Examiner Erred in Rejecting Claim 12 as obvious under 35 U.S.C. § 103 over Akhteruzzaman et al. in view of Salcic and further in view of Byrne, and further in view of Haub.

Claim 12 depends from the wireless telephone independent claim 11, and stands rejected as obvious over Akhteruzzaman, Salcic and Byrne and further in view of Haub (2004/015429). Haub is cited for a teaching of circuitry monitoring a ratio of Ec/Io where Ec is a measure of carrier strength and Io is a measure of interference.

Haub's teaching does not overcome the deficiency of Akhteruzzaman, Salcic and Byrne in failing to teach or suggest the feature of claim 11 of a wireless telephone that includes logic "automatically continuing to monitor the received signal strength after the first feature code is transmitted ***and for transmitting a second feature code . . . deactivating call forwarding when said circuitry determines that the received signal strength, having fallen previously below a threshold level, rises above said threshold level.***" As noted above, Akhteruzzaman monitors GPS location, not signal strength, after the first signal is sent to the network to activate call forwarding (assuming that a subscriber has entered a land line telephone number that is in the same geographic proximity to where signal is lost). Therefore, Akhteruzzaman's wireless telephone does not work in the manner claimed in claim 11. Salcic measures signal strength for purposes of geolocation, not call forwarding and termination of call forwarding. Byrne measures signal strength for purposes of selection of an initial mode or format of communication, such as

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cellular wireless or cordless telephone, but does not teach usage of feature codes to terminate call forwarding.

Haub's teaching, if applied to Byrne or Salcic, would suggest at most one method to determine location or to select an initial mode of transmission, and is irrelevant to Akhteruzzaman since that references uses GPS data, not signal strength measurements, to initially activate call forwarding. Haub does not suggest continuing to monitor Ec/Io after a call forwarding signal has been sent and deactivating call forwarding in the event Ec/Io rises above the threshold.

Consequently, even if Haub were to be combined with Akhteruzzaman, Byrne or Salcic, the result is the not invention of claim 12. The rejection should be reversed.

7. The Examiner Erred in Rejecting Claim 14 as obvious under 35 U.S.C. § 103 over Akhteruzzaman et al. in view of Salcic and further in view of Byrne, and further in view of Kissee et al.

Claim 14 stands rejected as obvious over Akhteruzzaman, Salcic and Byrne and further in view of Kissee. Claim 14 depends from claim 13 and recites that a service control node sets the threshold level at which the wireless stations send feature codes to turn on and off call forwarding.

The Examiner cites Kissee for a teaching of a service control node setting a threshold level (col. 13 lines 10-13.) The disclosure of received signal strength indicator (RSSI) in Kissee is in the context of how cells should be ranked in order to prioritize cells and handle a situation of overflow or excess call volumes. See col. 12 lines 48 et seq., col. 1 lines 7-14; col. 2 lines 51-65. This is clearly not a teaching of setting received signal strength for turning on and off call forwarding.

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Furthermore, the context of Kissee's teaching of setting thresholds for purposes of cell rankings adds nothing to the utter lack of a teaching of Akhteruzzaman, Byrne and Salcic of monitoring received signal strength and sending a feature code to a network node to turn off call forwarding when the signal strength rises above a threshold. Since the network node of Kissee *is ranking cells, not activating and deactivating call forwarding*, it does not teach a "service control node in said cellular telephony network that activates and deactivates a call forwarding service for said roaming mobile stations, wherein said call forwarding service is activated and deactivated by transmission of first and second feature codes from said roaming mobile stations, respectively, and further wherein said first and second feature codes are transmitted when a monitored measure of received signal strength at said mobile stations falls below, and rises above, a threshold level, respectively", as claimed in claim 13 from which claim 14 depends.

The rejection of claim 14 is clearly improper and should be reversed.

8. The Examiner Erred in Rejecting Claim 15 as obvious under 35 U.S.C. § 103 over Akhteruzzaman et al. in view of Salcic and further in view of Byrne, and further in view of Balachandran et al.

Claim 15 stands rejected as obvious over Akhteruzzaman, Salcic and Byrne and further in view of Balachandran (5,594,943). Claim 15 recites that the threshold level at which feature codes are transmitted to activate and deactivate call forwarding is determined by reference to a level at which calls are dropped.

The Examiner cites Balachandran for a teaching of a threshold level at which calls are dropped, citing to col. 2 lines 24-25. The discussion of thresholds in Balachandran is in the context of ***handoff of a mobile between cells/sectors, not call forwarding***. The document

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discloses that there can be two thresholds, a primary one and a secondary or emergency threshold, see col. 2 lines 2-5. The reference is explaining background information on handoffs between cells and sectors, noting that such handoffs preferably occur so as to avoid dropping of calls. That teaching is totally irrelevant to the subject matter of claim 15 (and independent claim 13) of a node in a network that is switching on and off call forwarding in response to measurements of received signal strength. Balachandran fails to overcome the deficiency of Akhteruzzaman, Byrne and Salcic in failing to teach of monitoring received signal strength and sending a feature code to a network node to turn off call forwarding when the signal strength rises above a threshold.

Applicant therefore submits that the rejection of claim 15 should be reversed.

9. The Examiner Erred in Rejecting Claim 16 as obvious under 35 U.S.C. § 103 over Akhteruzzaman et al. in view of Salcic and further in view of Byrne, and further in view of Hilliard et al. (6,876,949).

Claim 16 stands rejected as obvious over Akhteruzzaman, Salcic and Byrne and further in view of Hilliard (U.S. 6,876,949). Claim 16 depends ultimately on claim 13 and recites that the threshold level (for triggering a sending a feature code to turn off call forwarding) is offset from a dropped call level by a fixed amount.

Hilliard is non-analogous art, in that it is referring to calibration of inductive vehicle detectors. See col. 4 lines 54-col. 5 line 23. The present invention is directed to call forwarding in the field of wireless telephony. The two fields have nothing to do with each other.

Furthermore, the Hilliard method discloses nothing in the way of call forwarding for

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wireless telephones and adds nothing to the deficiency of the primary references to suggest the subject matter of claim 13.

Finally, claim 16 recites that the threshold level at which feature codes are triggered are offset from a dropped call level by a fixed amount. The Examiner has not cited any specific teaching or suggestion of this in Hilliard or any of the other references.

Accordingly, the rejection of claim 16 should be reversed.

Conclusion

Applicant has demonstrated that the rejections are in error as a matter of law. Applicant therefore requests reversal of the rejections and allowance of all pending claims in this application.

Respectfully submitted,

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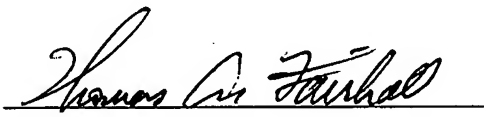
Date: 9/26/2006

By: 

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CLAIMS APPENDIX

1. (original) A method of activating call forwarding for a mobile station, comprising the steps of:

monitoring a measure of received signal strength at said mobile station;

automatically transmitting a first feature code from said mobile station to a wireless network when said monitored measure of received signal strength falls below a threshold level, said first feature code activating call forwarding for said mobile station such that incoming calls are directed to a previously programmed directory number;

continuing to monitor signal strength at said mobile station during a period when call forwarding is activated;

automatically transmitting a second feature code from said mobile station to a wireless network when said signal strength rises above said threshold level, said second feature code deactivating said call forwarding.

2. (original) The method of claim 1, wherein said step of monitoring a measure of received signal strength comprises the step of monitoring the ratio E_c/I_o, wherein E_c is a measure of carrier strength and I_o is a measure of interference.

3. (original) The method of claim 1, wherein said step of monitoring a measure of received signal strength comprises the step of monitoring a signal to noise ratio of a received signal from a base transceiver station in a cellular telephone network.

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4. (original) The method of claim 1, wherein said mobile station comprises a cellular telephone.

5. (original) The method of claim 1, wherein the previously programmed directory number is changeable by a user of said mobile station by interactively entering said directory number.

6. (original) The method of claim 1, wherein said feature code is sent to said wireless network over an access channel.

7. (original) The method of claim 1, wherein the threshold level is determined by an element in said wireless network and transmitted to said mobile station.

8. (original) The method of claim 1, wherein the threshold level varies depending on the type of mobile station.

9. (original) The method of claim 1, wherein the threshold level lies in the range of –85dB to-90 dB.

10. (original) The method of claim 1, wherein the first feature code is transmitted if the monitored measure of received signal strength remains below the threshold level for a predetermined period of time.

11. (previously presented) A wireless telephone comprising:

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circuitry monitoring a measure of received signal strength from a wireless base transceiver station;

programmable logic providing instructions for automatically transmitting a first feature code from said wireless telephone to a wireless network activating call forwarding when said circuitry determines that the received signal strength falls below a threshold level; and

programmable logic providing instructions for automatically continuing to monitor the received signal strength after the first feature code is transmitted and for transmitting a second feature code from said wireless telephone to a wireless network deactivating call forwarding when said circuitry determines that the received signal strength, having previously fallen below a threshold level, rises above said threshold level.

12. (original) The wireless telephone of claim 11, wherein said wireless telephone operates in a CDMA network and wherein said circuitry monitors the ratio E_c/I_o, wherein E_c is a measure of carrier strength and I_o is a measure of interference.

13. (original) In a cellular telephony network comprising a plurality of base transceiver stations and roaming mobile stations subscribing to said network, the improvement comprising:

providing a service control node in said cellular telephony network that activates and deactivates a call forwarding service for said roaming mobile stations, wherein said call forwarding service is activated and deactivated by transmission of first and second feature codes from said roaming mobile stations, respectively, and further wherein said first and second feature codes are transmitted when a monitored measure of received signal strength at said mobile stations falls below, and rises above, a threshold level, respectively.

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14. (previously presented) The improvement of claim 13, wherein the service control node sets the threshold level.

15. (previously presented) The improvement of claim 13, wherein the threshold level is determined by reference to a level in which calls are dropped.

16. (previously presented) The improvement of claim 15, wherein the threshold level is offset from a dropped call level by a fixed amount.

17. (previously presented) The improvement of claim 13, wherein the threshold level is based on the type of the mobile station.

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EVIDENCE APPENDIX

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RELATED PROCEEDINGS APPENDIX

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